

SLIDE IT!

Suggested Grade

4

SD Mathematics Strand & Standard (*Primary for Task*)

Geometry

4.G.2.2. Students are able to identify a slide (translation) of a given figure.

Task Summary

Students will demonstrate translations using right triangles.

Time and Context of Task

1 period – 30 to 45 minutes

Materials Needed

Right triangles made from construction paper

Author and Lead Teacher for the Task

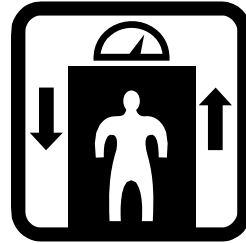
Deb Ford

Chamberlain

SLIDE IT!

Activity Procedure

- Students will create a list of real-world examples of translations (riding on an escalator or in an elevator, pushing a vacuum cleaner back and forth, sliding down a slide).
- Students show a translation by using their right triangles made from construction paper.
- Using the right triangles students copy the translation on paper.



CONTENT STANDARDS

Primary Standard

Strand Name: Geometry

SD Goal: Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships.

Indicator: Use properties of geometric figures to solve problems from a variety of perspectives.

Standard: 4.G.2.2. Students are able to identify a slide (translation) of a given figure.

NCTM Process Standard

Problem Solving

- Apply and adapt a variety of appropriate strategies to solve problems

Communication

- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- Use language of mathematics to express mathematical ideas precisely.

Problem-Solving Strategies

- Modeling
- Looking for patterns

ASSESSMENT TOOLS

Chamberlain Elementary Schools *Math Rubric*



Name: _____

Teacher: Mrs. Ford

Date Submitted: _____

Title of Work: _____

	Criteria				Points
	4	3	2	1	
Use Of Visuals	Clear diagram or sketch with some detail.	Clear diagram or sketch.	Inappropriate or unclear diagram.	No diagram or sketch.	—
Demonstrated Knowledge	Shows complete understanding of the questions, mathematical ideas, and processes.	Shows substantial understanding of the problem, ideas, and processes.	Response shows some understanding of the problem.	Response shows a complete lack of understanding for the problem.	—
Requirements	Goes beyond the requirements of the problem.	Meets the requirements of the problem.	Hardly meets the requirements of the problem.	Does not meet the requirements of the problem.	—
				Total--->	—

Teacher Comments:

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**Fourth Grade Geometry
Performance Descriptors**

Advanced	Fourth grade students performing at the advanced level: <ul style="list-style-type: none"> • sketch two- and three-dimensional figures and identify the lines and angles; • illustrate flip, turn, or slide (reflection, rotation, or translation).
Proficient	Fourth grade students performing at the proficient level: <ul style="list-style-type: none"> • identify and compare two- and three-dimensional figures, lines, and angles; • identify slide (translation).
Basic	Fourth grade students performing at the basic level: <ul style="list-style-type: none"> • recognize basic geometric figures; • demonstrate a slide (translation) using concrete objects.

**Fourth Grade Geometry
ELL Performance Descriptors**

Proficient	Fourth grade ELL students performing at the proficient level: <ul style="list-style-type: none"> • identify and describe two- and three-dimensional figures, lines, and angles; • identify rotation (turn), translation (slide), and reflection (flip); • read, write, and speak the basic language of geometry.
Intermediate	Fourth grade ELL students performing at the intermediate level: <ul style="list-style-type: none"> • identify and describe two- and three-dimensional figures, lines, and angles; • identify rotation (turn), translation (slide), and reflection (flip); • write responses with oral support; • explain in geometric terms the sequence of steps used in solving problems; • give simple oral responses to questions on topics presented in class.
Basic	Fourth grade ELL students performing at the basic level: <ul style="list-style-type: none"> • identify simple two- and three-dimensional figures verbally; • give limited written responses, which may include simple phrases, to directed questions on topics presented in class; • recognize and use basic geometric terms; • respond to yes or no questions and to problems presented pictorially or numerically in class.
Emergent	Fourth grade ELL students performing at the emergent level: <ul style="list-style-type: none"> • identify basic geometric figures non-verbally; • copy and draw basic geometric figures; • imitate pronunciation of geometric shapes and terms; • use non-verbal communication to express mathematical ideas.
Pre-emergent	Fourth grade ELL students performing at the pre-emergent level: <ul style="list-style-type: none"> • observe and model appropriate cultural and learning behaviors from peers and adults; • listen to and observe comprehensible instruction and communicate understanding non-verbally.

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Student Work Samples

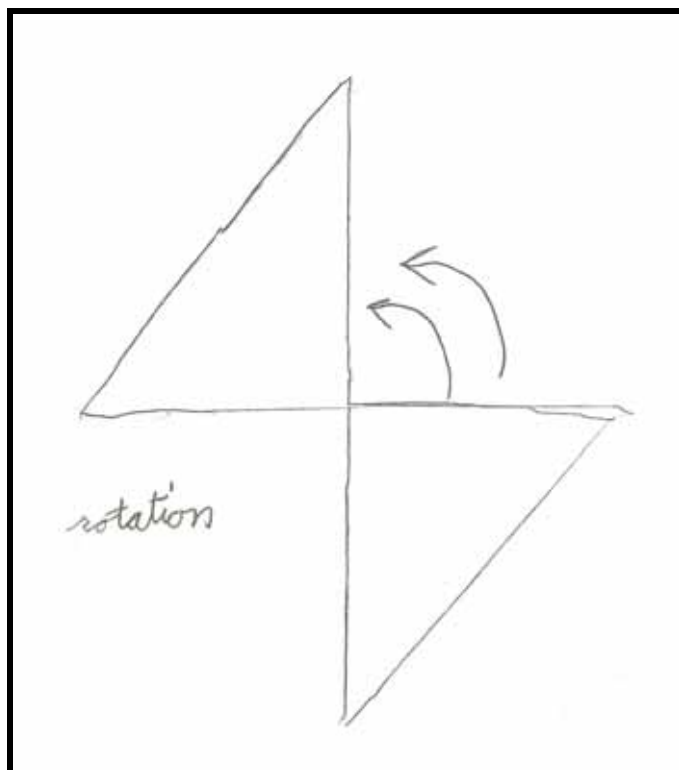
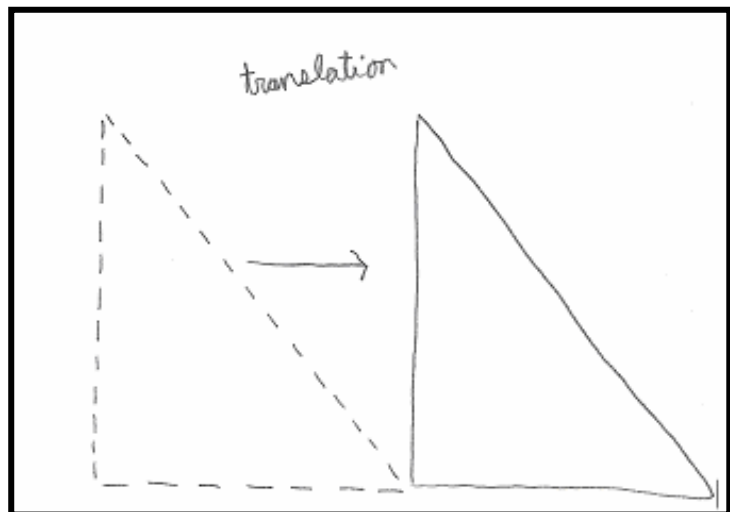


As you examine the samples, consider the following questions:

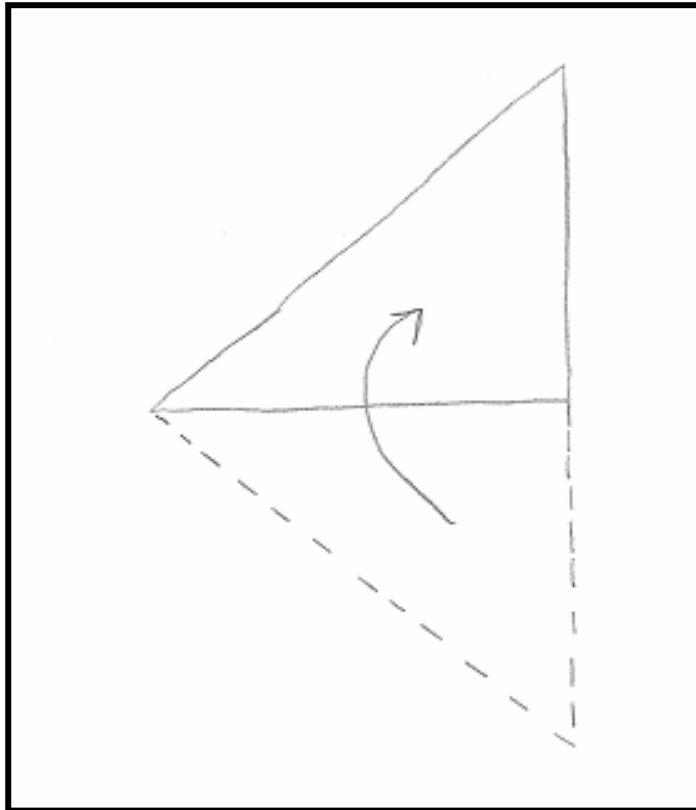
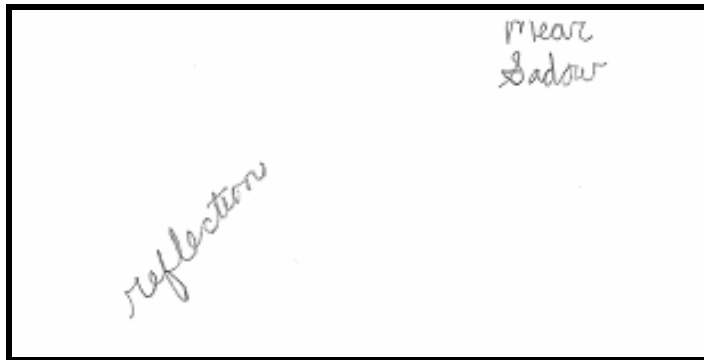
- In light of the standard/s addressed and the assessment tools provided, what evidence does the work provide that students are achieving proficiency in the knowledge and skills addressed by the standard/s for the task?
- Is the task/activity well designed to help students acquire knowledge and demonstrate proficiency? Is the task/activity clearly aligned with the standards? In what ways would you adapt the task/activity to better meet the needs of your students?

Student Work Sample #1

sliding door
slide
sledding
bunny jumping



Sample #1 – Page 2



Looking at Student Work – Instructor notes and rating for work sample #1

Chamberlain Elementary Schools Math Rubric



Name: _____

Teacher: Mrs. Ford

Date Submitted: 1-31-05

Title of Work: Translations

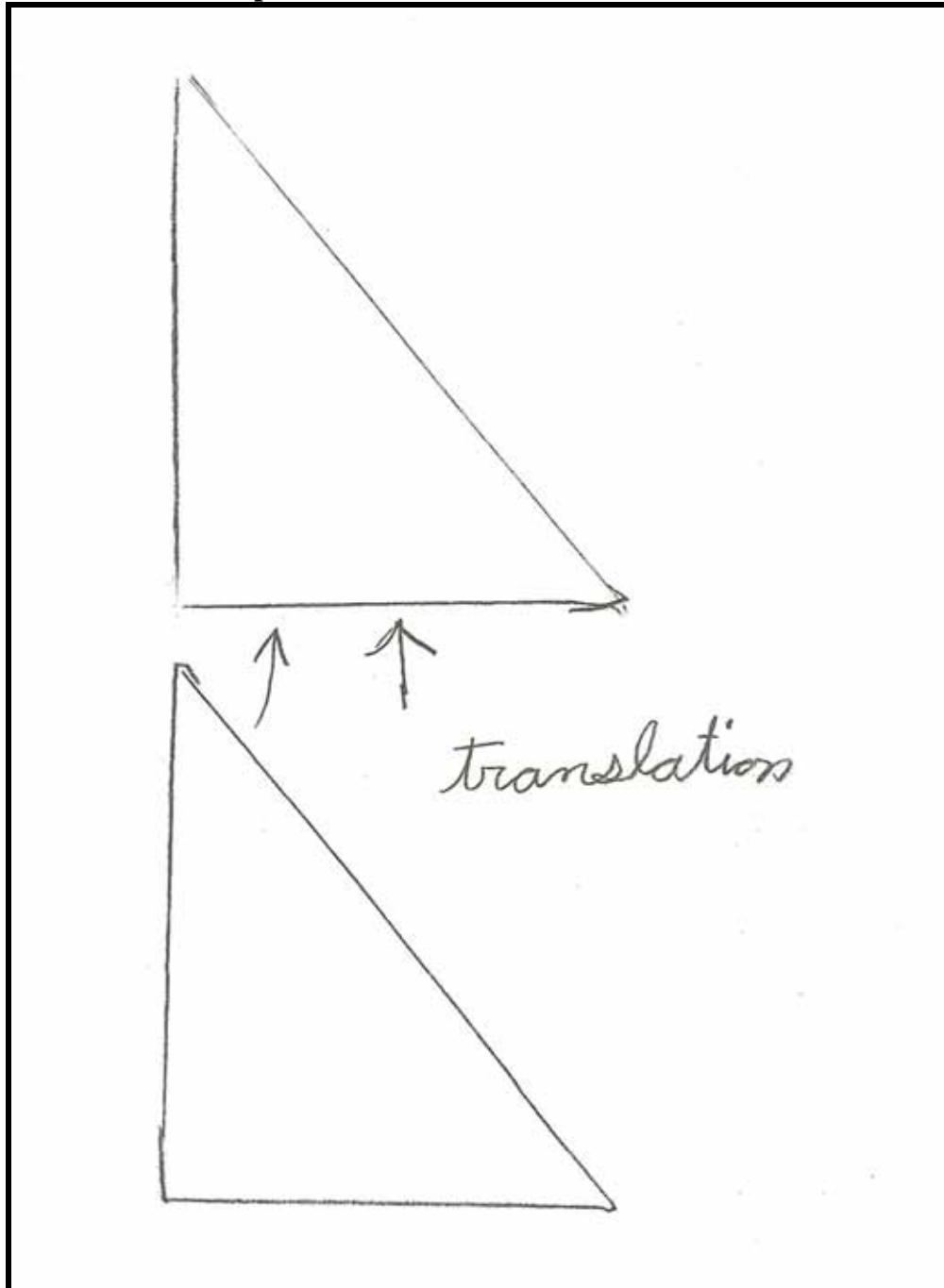
	Criteria				Points
	4	3	2	1	
Use Of Visuals	Clear diagram or sketch with some detail.	Clear diagram or sketch.	Inappropriate or unclear diagram.	No diagram or sketch.	<u>4</u>
Demonstrated Knowledge	Shows complete understanding of the questions, mathematical ideas, and processes.	Shows substantial understanding of the problem, ideas, and processes.	Response shows some understanding of the problem.	Response shows a complete lack of understanding for the problem.	<u>4</u>
Requirements	Goes beyond the requirements of the problem.	Meets the requirements of the problem.	Hardly meets the requirements of the problem.	Does not meet the requirements of the problem.	<u>4</u>
				Total---->	<u>12</u>

Teacher Comments: Advanced- This work was given an advanced score because the student completed illustrations for a reflection, rotation, and translation. The student also included real world

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examples for a translation and a reflection.

Student Work Sample #2



Looking at Student Work – Instructor notes and rating for work sample #2

Chamberlain Elementary Schools Math Rubric



Name: _____

Teacher: Mrs. Ford

Date Submitted: 1-31-05

Title of Work: Translation

	Criteria				Points
	4	3	2	1	
Use Of Visuals	Clear diagram or sketch with some detail.	Clear diagram or sketch.	Inappropriate or unclear diagram.	No diagram or sketch.	<u>3</u>
Demonstrated Knowledge	Shows complete understanding of the questions, mathematical ideas, and processes.	Shows substantial understanding of the problem, ideas, and processes.	Response shows some understanding of the problem.	Response shows a complete lack of understanding for the problem.	<u>3</u>
Requirements	Goes beyond the requirements of the problem.	Meets the requirements of the problem.	Hardly meets the requirements of the problem.	Does not meet the requirements of the problem.	<u>3</u>
				Total---->	<u>9</u>

Teacher Comments: *Proficient - This work was given a proficient score because the student identified and illustrated a translation.*

INSTRUCTIONAL NOTES

Author Comments

I found using two right triangles made out of two different colors of construction paper useful for the students in understanding translations, rotations, and reflections.

Websites

- Lesson Site from Oswego City School District Regents Exam Prep Center. Copyright ©1999-2005.
<http://regentsprep.org/Regents/math/trans/Ltrans.htm>
 - MathsNet activity site for students
<http://www.mathsnet.net/transform/>
-

Resources

SD Mathematics Content Standards

<http://www.doe.sd.gov/contentstandards/math/index.asp>

SD Assessment and Testing

<http://www.doe.sd.gov/octa/assessment/index.asp>

The National Assessment of Educational Progress (NAEP)

<http://www.doe.sd.gov/octa/assessment/naep/index.asp>

National Council of Teachers of Mathematics

<http://nctm.org/>

Looking at Student Work

<http://www.lasw.org/index.html>